

REMARKS

This is a response to the January 30, 2006 third Office action that was issued in connection with the above-identified patent application. The prior Office actions constituted Restriction Requirements, with the present Office action being the first examination of the pending claims on the merits. Prior to entry of the above amendments, claims 1-15, 17-32, 34-42, and 67-75 were pending in the application, with claims 1-15, 17-32, 34-39, and 67-75 rejected and claims 16, 33, and 40-66 withdrawn from consideration. By the above amendments, claim 73 is cancelled without prejudice.

As an initial matter, Applicants thank the Examiner for noticing that one of the recently submitted references was already of record in the application. Applicant is prosecuting quite a few applications relating generally to fuel processing and/or fuel cell systems or components. Apparently, a reference was submitted twice in the course of Applicants trying to maintain a complete disclosure of relevant cited references. Applicants also acknowledge that there are quite a few references of record as a result of the number of applications previously and currently prosecuted by Applicants. Applicants thank the Examiner for consideration of these references.

In the Office action, claims 16, 33, and 43-66 were previously withdrawn from consideration in view of Applicants' responses to the prior restriction requirements. Applicants note from the third Office action that the Examiner has withdrawn claims 40-42 on the grounds that the subject matter of these claims is not disclosed in Fig. 9, the previously elected species. Applicants request reconsideration of this withdrawal of claims 40-42 because Fig. 9 illustrates a purification region 48, and the present application clearly states that any of the illustrated purification regions 48 may, but are not required to, include a reforming catalyst bed, such as

graphically illustrated in Fig. 4. Therefore, while reference numeral 150 is not presented in Fig. 9, the scope of the present disclosure is that the illustrated purification region 148 may, but is not required to, include such a region.

Claim 72 stands objected to under 37 C.F.R. 1.75 as being a substantial duplicate of claim 73. Applicants also thank the Examiner for noticing that claims 72 and 73 recite very similar subject matter. While Applicants respectfully submit that the claims could be retained in the application because they do not recite identical subject matter, Applicants have cancelled claim 73 without prejudice in deference to the Examiner's concern about the similarity in wording of the claims.

Claims 1-15, 17-26, 35-39, 67-71, and 74-75 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,469,944 to Bocard. As expressed in the Office action, Bocard (and Edlund '117 and the other cited references that are commonly owned with the present application) discloses a hydrogen-producing fuel processing system having a shell, a reforming region, and a separation region. Nowhere in Bocard or in the Office action is any disclosure provided regarding Bocard disclosing any form of modular component that is adapted (i.e., specifically configured or constructed) to be accessed, removed from and replaced as a unit into an operational position of the fuel processor. Instead, reference is made to *In re Dulberg*, which is cited for the proposition that making elements of a known device separable is not a patentable innovation.

Applicants have studied the reasons expressed in the Office action, the cited references, and the *Dulberg* case in view of the presently pending claims. Applicants respectfully traverse and request reconsideration of the rejections for at least the following reasons: (1) *In re Dulberg* does not provide a per se rule that making components of a device

separable is not a patentable improvement; (2) regardless of the proper holding of *Dulberg*, the presently pending claims are not anticipated by Bocard; and (3) the presently pending claims recite additional limitations than “separable.” Each of these reasons is discussed below, and any of these reasons should be sufficient to compel withdrawal of all presently pending rejections.

(1) *In re Dulberg* does not provide a per se rule that making components of a device separable is not a patentable improvement

While the MPEP does state that the rationale for making a portion of a device separable when making an obviousness rejection may come from *Dulberg*, this rationale should also consider *For Your Ease Only*, which states that such a limitation may be sufficient to overcome an obviousness rejection. In other words, *Dulberg* does not establish a *per se* rule that separable components may not be patentable. Instead, additional analysis is required on a case-by-case basis. In the present application, no such additional analysis, nor additional basis for the rejections, was provided.

In re Dulberg dealt with a patent application for a lipstick holder which was identical in elements to an existing invention, with the exception of a removable cap. 289 F.2d 522, 523 (C.C.P.A. 1961). The application was rejected under 35 U.S.C. § 103(a), the court holding that “if it were considered desirable for any reason to obtain access to the end of Peterson’s holder to which the cap is applied, it would be obvious to make the cap removable for that purpose.” *Id.*

Dulberg was adopted in the Manual of Patent Examining Procedures, Section 2144.04[V][C], which treats making a device separable as a practice which requires only

ordinary skill in the art, and is thus considered a routine expedient. However, if an applicant has shown that the limitation is critical, the MPEP advises that it would be inappropriate for an examiner to rely solely on the *Dulberg* case law as the rationale for an obviousness rejection. MPEP Manual of Patent Examining Procedures § 2144.04. In the present application, the specification clearly sets forth that the application is directed to solving the problem that components of prior art fuel processing and fuel cell systems having an external shell cannot be readily accessed, such as for inspection, maintenance, removal, or repair. For example, see page 22, lines 7-18, of the present specification. Additionally or alternatively, the limited access to these components has in the past required shutdown of the fuel processing or fuel cell system, with subsequent disassembly of components thereof to obtain the desired access. In view of the above, Applicants submit that a prima facie case of obviousness has not been made. Accordingly, Applicants request withdrawal of the rejections made in the Office action.

In re Dulberg and MPEP Section 2144.04 were applied and clarified in *For Your Ease Only, Inc. v. Natural Science Industries, Ltd.* *For Your Ease Only* examined a patent for a decorative bowl which an accused infringer claimed was obvious because it differed from a prior art reference only in making the bottom of the bowl removable. 233 F. Supp. 2d 988, 991 (D. Ill. 2002). The court distinguished *Dulberg* and reversed the corresponding obviousness rejection. According to the court, making the bottom of the bowl removable was essential to the operativeness of the claimed invention and the patentability of the claims. *Id.*, *Storchheim*, 56 C.C.P.A. at 1150.

Applicants submit that a similar situation exists in the context of the present application, where prior art devices have demonstrated functional and performable limitations that are overcome by the systems recited in the pending claims. The recited modular

components are not merely present for “ease or convenience” and are a stark distinction to the subject matter recited in Bocard. Accordingly, Applicants request withdrawal of the rejections of claim 1 and the claims that depend therefrom.

(2) The presently pending claims are not anticipated by Bocard, regardless of the application of *Dulberg*

Independent claims 1 and 67 stand rejected as being anticipated by Bocard. However, and as discussed, Bocard is akin to the prior art fuel processing systems discussed in Applicants’ specification. Specifically, there is no disclosure or suggestion in Bocard that its components are separable components, much less components that are modular and “adapted to be accessed, removed from and replaced as a unit into an operational position of the fuel processor.” Accordingly, it follows that Bocard does not and cannot anticipate claim 1, claim 67, or any claims that depend therefrom. At best, Bocard in view of *Dulberg* would need to be an obviousness rejection. However, as discussed in (3), below, this too is not a proper rejection. Upon withdrawal of the rejections of claims 1 and 67 based on Bocard, Applicants submit that all of the remaining dependent claims should be allowed, not only because they patentably distinguish the cited references, but also because they were not otherwise rejected in the Office action.

(3) The presently pending claims recite additional limitations than “separable.”

As discussed, independent claim 1 recites that “at least a portion of the fuel processor is a modular component that is adapted to be accessed, removed from and replaced as a unit into an operational position of the fuel processor” and independent claim 67 recites “at least one cartridge-based component forming an operative portion of the fuel processor and being adapted to be accessed, removed from and placed as a unit into an operative position as a portion of the fuel processor.” Accordingly, a device according to claims 1 or 67 would need to include at least one component that is specifically designed or constructed (i.e., adapted) to be accessed, removed from and replaced as a unit into an operational position of the fuel processor. This is much different than simply being theoretically able to be removed and replaced. Accordingly, when consideration is given to the express language of these claims, Applicants submit that the claims patentably distinguish Bocard regardless of whether *Dulberg* is considered in this analysis.

For at least the above reasons, Applicants submit that all of the stated rejections that are based on the *Dulberg* should be reconsidered and withdrawn. Neither Bocard nor any of the other cited references disclose the modular components recited in independent claim 1, independent claim 67, or any claim that depends therefrom. Applicants further submit that this distinction also has been recognized by the Examiner, as the Office action contains no discussion, much less specific identification, of where the cited references disclose or suggest the claimed subject matter.

Applicants note that the previously discussed rejections of claims 2 and 19 are also based upon a position that the claims are directed to a manner of operating device and that such a manner does not limit an apparatus claim. Applicants respectfully traverse and request withdrawal of this basis for rejecting claims 2 and 19, as well as any other pending claims that

recite functional limitations. These limitations are not “manner of use” claims. Instead, they recite functional limitations that must be given patentable weight and cannot be ignored. The “adapted to” language recited in the claims imparts specific weight to the recited limitation, not just a theoretical use.

Applicants respectfully disagree with the Examiner’s position that these claim limitations may be disregarded as not providing a positive claim limitation. Applicants submit that the Examiner’s position is contrary not only to the specific guidance provided by the MPEP, but also to the relevant case law that addresses the use of functional claim language. For example, MPEP § 2173.05(g) is particularly directed to the use of functional claim language, and instructs that this type of claim language is proper and should be considered “just like any other limitation of the claim.” Section 2173.05(g) is reproduced below for the Board’s convenience.

2173.05(g) Functional Limitations

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step. Whether or not the functional limitation complies with 35 U.S.C. 112, second paragraph is a different issue from whether the limitation is properly supported under 35 U.S.C. 112, first paragraph or is distinguished over the prior art. A few examples are set forth below to illustrate situations where the issue of whether a functional limitation complies with 35 U.S.C. 112, second paragraph was considered.

It was held that the limitation used to define a radical on a chemical compound as “incapable of forming a dye with said oxidizing developing agent” although functional, was perfectly acceptable because it set definite boundaries on the patent protection sought. *In re Barr*, 444 F.2d 588, 170 USPQ 33 (CCPA 1971).

In a claim that was directed to a kit of component parts capable of being assembled, the Court held that limitations such as “members adapted to be positioned” and “portions . . . being resiliently dilatable whereby said housing may be slidably positioned” serve to precisely define present structural attributes of interrelated component parts of the claimed assembly. *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976).

Although others exist, the *In re Venezia* case (189 USPQ 149 (CCPA 1976) that is referenced in the above section of the MPEP provides a suitable example of an illustrative case that supports Applicants’ position. In *Venezia*, the Board reversed the examiner’s rejections that were based upon the interpretation that “adapted to” merely means “capable of.” Instead, the Board, instructed that the functional language, such as “adapted to be affixed,” “adapted to be positioned,” and “adapted to be fitted” imparted structural limitations to the claim that needed to be considered. Id. at 152.

Applicants submit that perhaps the differences in opinion as to how the functional language of the pending claims should be considered may be the primary reason that the corresponding claim rejections have been made by the Examiner. Properly construed, structure that is “adapted to” perform a function does provide a positive claim limitation that must be considered and found in the cited reference. As these functional limitations have not been treated as such, Applicants submit that the claim rejections should be reconsidered and withdrawn.

In view of the above, Applicants submit that the rejections based on Bocard have been discussed. Moreover, numerous reasons why the rejections should be withdrawn have been

presented. Accordingly, Applicants request reconsideration and withdrawal of the rejections based on Bocard.

Claims 27-34 and 72-73 stand rejected under 35 U.S.C. § 103 as being obvious over Bocard for the above-discussed reasons, in view of U.S. Patent No. 5,175,062 to Farooque et al. The Examiner correctly recognizes that Bocard fails to disclose or suggest the filter assembly recited in the rejected claims. However, Farooque is cited for disclosing such a filter assembly. As expressed in the Office action, it would have been obvious to modify the system of Bocard to include the filter assembly of Farooque to prevent catalyst particulates from being blown out of the reforming catalyst bed. Applicants respectfully traverse and request reconsideration of these rejections.

As an initial matter, claims 27-34 depend from claim 1 and claims 72-73 depend from claim 67. Accordingly, these claims should be allowed when claims 1 and 67 are allowed. Claim 73 has been cancelled without prejudice in deference to the Examiner's concern about the similar subject matter of claims 72 and 73, but Applicants submit that both claims still recite patentable subject matter.

In addition to the above reason, Applicants submits that the required teaching or motivation simply has not been shown to reconstruct the system of Bocard to not only include the claimed modular, or cartridge-based component, but also to include such a component in the form of the filter assembly of Farooque. Instead, the rejections appear to be predicated upon hindsight recognition of the subject matter recited in the pending claims. This too is improper, and Applicants accordingly request withdrawal of the rejections of these claims for at least this additional reason.

As an even more specific reason, Farooque is directed to a reformer and fuel cell stack that are integrated into a sealed housing. Accordingly, it follows that Farooque teaches away from the proposed modification to include a cartridge-based, or modular, filter assembly to the system of Bocard. This is an additional reason why the rejections of these dependent claims should be withdrawn.


Claim 1 also stands rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,221,117 to Edlund et al. As expressed in the Office action, this rejection is analogous to the rejection of claim 1 based on Bocard. More specifically, no teaching or disclosure is provided in the cited reference for a modular component that is “adapted to be accessed, removed from and replaced as a unit into an operational position of the fuel processor.” Instead, reliance is made upon *In re Dulberg*. As discussed, this rejection is improper and should be withdrawn for reasons analogous at least any of the three bases discussed above in connection with the rejections of claim 1 based on Bocard.

Claim 1 stands rejected under the judicially created doctrine of obviousness-type double patenting over U.S. Patent Nos. 6,221,117 and 6,719,832. Claim 1 has also been provisionally rejected under the doctrine of obviousness-type double patenting in view of U.S. Patent Applications Serial Nos. 10/016,807 or 11/247,744, both in view of Bocard. Claim 1 has also been provisionally rejected under the doctrine of obviousness-type double patenting in view of U.S. Patent Application Serial No. 10/989,907. Applicants have studied the reasons expressed in the Office action in connection with these rejections. Applicants respectfully traverse and request withdrawal of each of these rejections for at least reasons analogous to reasons (1) and (3) that were discussed above in connection with the § 102(b) rejections based on Bocard.

With the above species election for initial examination, Applicants submit that all of the issues raised in the third Office action have been addressed. If the Examiner has any questions or identifies any remaining issues that may be resolved in a telephone interview to advance prosecution of the present application, Applicants request that the Examiner contact Applicants' undersigned attorney at the number listed below so that the remaining issues may be discussed.

Respectfully submitted,

KOLISCH HARTWELL, P.C.

A handwritten signature in black ink, appearing to read 'David S. D'Ascenzo', is written over a horizontal line.

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